SEQUENCE LISTING

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<120> Enhanced Targeting of DNA Sequences by Recombinase and Single-Stranded Homologous DNA Probes using DNA Analog Activation

<130> A-69625-1/RFT/DLR

<140> US 09/919,345
<141> 2001-07-30

<150> US 60/222,272
<151> 2000-07-31

<160> 3

<170> PatentIn version 3.1

<210> 1
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<212> PRT
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A3

<220>
<223> Protein consensus sequence from gene family involved in DNA mismatch repair, such as mutL, hexB and PMS1.

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<400> 2
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<210> 3
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<212> DNA
<213> Artificial sequence

<220>
<223> peptide nucleic acid

<400> 3
tttttttttt 10

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning at page 22, line 21, has been amended as follows:

–In a preferred embodiment, the gene family is involved in DNA mismatch repair, such as mutL, hexB and PMS1. Members of this family include, but are not limited to, MLH1, PMS1, PMS2, HexB and MulL. The protein consensus sequence is G-F-R-G-E-A-L (SEQ ID NO:1). –

Paragraph beginning at page 45, line 1, has been amended as follows:

– PNA activated targeting of linear plasmid DNA containing the human HPRT gene by RecA-coated complementary single-stranded (css) probes (See Figure 5A, 5B and 5C): Plasmid pHp3A-pUC containing a 530 bp fragment of human HPRT gene was cloned into the EcoR1-HindIII site of the vector pUC 18 (See Figure 5A). Complementary strand probes (1-2) and (1-3) were obtained by PCR from the pHp3A-pUC plasmid using the primers shown in Figure 5A. The human HPRT fragment contains sequence (dT)/(dA) 13 (SEQ ID NO:2), which provides an ideal binding site for the PNA lys-T_{10}- lys (SEQ ID NO:3). No other (dT)/(dA)-stretches longer than 5 bp are present within the HPRT fragment. The probe (1-2) has a three bp overlap with the PNA binding site. T10 was used instead of T13 PNA because the solubility of the PNA decreased with increased length. Thus, PNA could occupy four different positions within the site, with the overlap with the (1-2) probe varying from 0 to 3. The probe (1-3) contained the PNA binding site within it.–

On page 46, immediately preceding the heading "CLAIMS," the enclosed text entitled "Sequence Listing" was inserted into the specification.